

[illegible]

When the ambient temperature of the driving circuit rises, collector current of the transistor is increased due to the temperature characteristic of the transistor. This lowers the drain voltage of a high electron mobility transistor. However, collector current of the transistor within the temperature characteristic compensating circuit is also increased, increasing the voltage at a point, so that the increase in the collector current of the transistor is suppressed. This results in a stabilized drain voltage of the transistor. Therefore, the low noise down-converter can supply a stable voltage to a transistor performing frequency conversion, without any effect from the change in the ambient temperature.